DOCUMENT RESUME

ED 161 360 HE 010 590

AUTHOR	Bolte, John R.; Coleman, D. R.
TITLE	A Faculty Salary Resource Allocation Model for Balancing Salary Needs with Resources. AIR Forum Paper 1978.
INSTITUTION	Florida Technological Univ., Orlando.
PUB DATE	22 May 78
NOTE	26p.; Paper presented at the annual Association for Institutional Research Forum (18th, Houston, Texas, May 21-25, 1978)
EDRS PRICE	MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS	Bibliographies; *Budgeting; *College Faculty; Competition; Educational Finance; Faculty Recruitment; Higher Education; Institutional Research; Models; Research Projects; *Resource Allocations; *Salary Differentials; State Surveys; Statistical Data; *Teacher Salaries; *Teacher Supply and Demand; Universities
IDENTIFIERS	Oklahoma State Faculty Survey

ABSTRACT

The balancing of salary needs for financial resources requires that university administrators take a careful look at supply and demand factors in the academic marketplace when allocating salary funds to colleges and departments within a university. Quality academic programs can be maintained only if quality faculty members are attracted and retained. This requires the payment of faculty salaries which are competitive in the national marketplace. Average faculty salary data at the national and regional level by rank and discipline have been provided by the Oklahoma State Faculty Survey. Using this information, a study was completed to determine the extent to which each college within a university was competitive in the national marketplace and to establish a uniform procedure for correcting existing discrepancies. Limitations in making marketplace adjustments are discussed and an example, using actual data, is presented to demonstrate the procedure used to make each academic unit more competitive in the national marketplace. (Author)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED161360

THE ASSOCIATION FOR INSTITUTIONAL RESEARCH

This paper is part of the ERIC Collection of 1978 Association for Institutional Research Forum Papers. All papers in the Collection were recommended for inclusion by the AIR Forum Publications Review Committee.

Robert H. Fenske
Arizona State University
(Editor, AIR Forum Publications)

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

AIR

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

HE 010 590

A FACULTY SALARY RESOURCE ALLOCATION MODEL

FOR BAIANCING SALARY NEEDS WITH RESOURCES

Presented at

1978 AIR Forum

Houston, Texas

May 22, 1978

by

John R. Bolte
Associate Vice President for Academic Affairs
and
D. R. Coleman
Director of Institutional Research and Planning

Florida Technological University
Box 25000, Orlando, Florida 32816
Phone (305) 275-2351

ABSTRACT

The balancing of salary needs with financial resources requires that university administrators take a careful look at supply and demand factors in the academic marketplace when allocating salary funds to colleges and departments within a university. Quality academic programs can be maintained only if quality faculty members are attracted and retained. This requires the payment of faculty salaries which are competitive in the national marketplace.

Average faculty salary data at the national and regional level by rank and discipline have been provided by the Oklahoma State Faculty Salary Survey. Using this information, a study was completed to determine the extent to which each college within a university was competitive in the national marketplace and to establish a uniform procedure for correcting existing discrepancies. Limitations in making marketplace adjustments are discussed and an example, using actual data, is presented which demonstrates the procedure used to make each academic unit more competitive in the national marketplace.

INTRODUCTION

The allocation of salary resources internally among colleges and programs is a key issue that must be addressed in developing and maintaining quality programs. With a uniform distribution of salary resources, one may be able to maintain competitive salaries in one area and be totally non-competitive in another area. The "marketplace" approach in making salary allocations internally implies that administrators wish to make colleges, departments, and disciplines equally competitive in the marketplace for retaining and acquiring quality faculty members. Although average salaries are substantially different among disciplines within an institution, only limited progress has been made in balancing salary resource needs on the basis of the marketplace.

College and university administrators recognize significant faculty supply and demand changes over relatively short periods of time. In recent years, industry and government career opportunities for faculty and the interest of students in disciplines such as accounting, engineering and computer science have made recruiting quality faculty in these areas competitive and difficult. Simultaneously, well qualified graduates in disciplines such as physics, education, and several fields in humanities and fine arts are in plentiful supply while enrollments in these areas are decreasing. Although new-hire salaries are obviously impacted by marketplace conditions, faculty salary averages in general are slow to reflect these changes. Colleges and universities are affected in two ways by supply and demand changes and both can have a negative impact on program quality.

1. Where funding constraints are severe, program quality can be maintained only if new-hire salaries reflect the need for

higher salaries in short supply disciplines and take advantage of the marketplace in those disciplines that have an excess of qualified personnel. Administrators recognize that total salary funding is always limited and for this reason they must have salary flexibility to recognize the marketplace in hiring new or replacement faculty.

2. Faculty members in short supply disciplines become highly mobile and departments are sure to lose the most qualified and effective faculty members if competitive salaries are not maintained. Concurrently, disciplines which formerly enjoyed a high demand status and high relative salaries continue the high salary levels long after manpower supply equals or exceeds demand. These faculty members become non-mobile because jobs are not available and because they already enjoy higher than average salaries.

HISTORICAL PERSPECTIVE

Differences in university faculty salaries among disciplines have been observed for many years. Researchers have attributed these differences to factors related to skills, societal needs, and internal and external service demands. Research by Fuller (1976) revealed that the university reward structure involved both internal and external career options. Those faculty who have the necessary skills secure research grants, consultant positions, and prestigious panel appointments. In addition, they have opportunities to move into positions in industry and government.

Increased faculty collective bargaining activity and the desire by some to adopt salary schedules may jeopardize the freedom to provide

merit adjustments to faculty. Tuckman and Tuckman (1976) state that the marketplace salary differentials common in universities may be reduced as the result of collective bargaining and that productive faculty members in fields with numerous outside opportunities may leave academia. In secondary schools, where union contracts and salary schedules are common, marketplace differentials are rarely evident.

Factors affecting salary differentials among full-time university faculty members were investigated by Tuckman and Tuckman (1976) using an American Council on Education survey file. Although identifying salary differentials among disciplines was not the primary objective of the investigation, the findings lend support to the position that extensive salary differentials do exist among disciplines. Their findings revealed both regional and discipline differences for all ranks. Also, substantial salary differences were observed among the various disciplines, with medical faculty enjoying the highest average salary and botany faculty having the lowest average salary.

A study by Braskamp and Johnson (1977) which included eight land grant institutions indicates that marketplace and rank factor accounted for 38% of the variance in salary. A substantial amount of variance can be eliminated from this factor if rank is treated as an independent variable. However, rank status is dependent on the marketplace, discipline skills, and other employment opportunities available to faculty.

A study completed by Gillian (1976) at Oklahoma State University provides information by Higher Education General Information System (HEGIS) discipline on average salaries by rank. These findings demonstrated major differences within each discipline category and among

disciplines. The Oklahoma State Faculty Salary Survey provides definitive information by sub-discipline which can be used to develop a salary allocation process that will further the objective of making each discipline more competitive in the marketplace.

Advocates of the marketplace approach for setting salaries believe there is a logical, rational structure which will enable universities to compete for outstanding faculty in each discipline. Although limited research has been produced to document salary differentials among disciplines, the marketplace is obviously reflected in the university faculty salary structure.

RECOGNIZING THE ACADEMIC MARKETPLACE

Colleges and universities normally have some salary dollar flexibility even under the most adverse circumstances of static or declining enrollments and tight fiscal constraints. This flexibility comes about with turn-over of faculty, with new faculty positions (if the institution is growing), and with discretionary salary increases. To hire and retain high quality productive faculty members, administrators must recognize and react to the changing academic marketplace. Stated more explicitly,

1. The retention of quality faculty members in each discipline area is essential for the continued strength and academic growth of the university and requires that nationally competitive salaries be paid.
2. The recruitment of quality faculty members in each discipline area is essential for the continued strength and academic growth of the university and requires that nationally competitive new-hire salaries be paid.

To accomplish these goals, the administrator must have access to information which provides an accurate index of salary data by discipline including both new-hire data and average salary data by rank. Unfortunately, such data has not been readily available. The American Association of University Professors (AAUP) salary study provides salary information by rank and by selected categories of institutions but does not provide discipline salary information. Some accrediting groups such as the American Association of Collegiate Schools of Business and the Engineering Council for Professional Development have provided detailed salary information but one can not be sure that data collection procedures were uniform across the disciplines studied. Thus far only one study, the Oklahoma State Faculty Salary Survey, has been identified which provides data uniformly collected across HEGIS disciplines by rank. Although the study does not cover a large number of institutions (58 in 1976-77), it does provide a nationwide sample and a reasonable cross-section of institutions belonging to the National Association of Universities and Land Grant Colleges (NASULGC). The Oklahoma State Faculty Salary Survey was instituted in 1974 by the Office of Institutional Research at Oklahoma State University and has been continued each year since that time.

Any general comparison of average salaries among disciplines within a university or comparisons between institutional averages and national averages is beset with a number of difficulties. Obviously, rank distributions will be a factor. Those institutions or disciplines within an institution which have a large percentage of faculty members in the higher ranks will reflect higher overall average salaries. Salary averages usually provide no recognition of such factors as length of

time in rank, variations in institutional promotional policies, or programs which have been singled out for special emphasis. These difficulties do not rule out the use of averages for comparison purposes but they must be recognized as legitimate reasons to modify conclusions internally for individual disciplines and departments.

THE STUDY

It was the initial purpose of this study to make a determination of the total number of salary dollars to be allocated to each of six colleges within the university and to base this allocation, at least in part, on recognition of the national marketplace. It was immediately recognized that rank distributions in the six colleges were different and would have to be taken into account in determining the total number of salary dollars needed by each college. Further, it was clear that the college deans would want rank information and in some cases discipline information to form a basis for their internal college salary decisions. Finally, it was recognized that each college would hire new faculty members as a result of new position allocations or as replacement faculty in positions which were vacated because of resignations, retirement, or internal transfers. The study was therefore designed to provide needed information for both the general allocation of salary dollars by the Office of Academic Affairs and allocation of salary dollars to departments by the college deans.

The first step in the study was to identify variations, if any, between average salaries currently paid by the colleges and corresponding average salaries paid nationally. This was accomplished by the following procedure:

1. Existing salary data were used to establish the current salary expenditures in each college. This information was maintained in sufficient detail so that data by rank and HEGIS discipline could be provided for the college deans.
2. Salary requirements in each discipline by rank were calculated using the assumption that average salaries nationally were being paid in each discipline and rank. For this calculation, salary averages provided by the Oklahoma State Faculty Salary Survey were used.

The rank and discipline calculations completed in steps 1 and 2 were aggregated to provide a comparison of total college salary dollar requirements and the results are shown in Table 1. The aggregate data will be sufficient for purposes of this paper but the detailed data for each rank and discipline was of interest to the deans.

Insert Table 1 approximately at this point.

Table 1 provides significant information for the administrative decision-maker. It is immediately obvious that salaries being paid are well below the national average in total and that none of the six colleges are paying salaries at or above the national average. Such data can provide the basis for justifying the need for an increase in salary funding to legislators or trustees. It is important to note that the salary discrepancy could be caused by a permissive promotion policy which has resulted in a rank distribution in the upper ranks which is far above the national average (Bolte, Thomas, Coleman, 1976).

Regardless of the reason actual salaries are below the national

average, practical reality placed a limit on available salary dollars. Therefore, a third column is included in Table 1 which shows how available salary dollars for the current year should have been allocated if each college "shared equally" in the salary deficit when compared to national averages. Now the picture is a little different. When the total dollar constraints are recognized, it becomes clear that salaries paid in colleges A, B, and D are higher than the prorated national average, salaries paid in college E (in total) are approximately equal to the prorated national average, and salaries paid in colleges C and F are below the prorated national average. Clearly, the six colleges are not equally competitive in the national marketplace for retaining the best faculty members.

Assuming there are no a priori reasons for average salary differences among the six colleges when compared to the national averages and that university administrators wish to place each college in an equally competitive position for faculty recruitment and retention, steps must be taken to increase salaries in colleges C and F relative to salaries in colleges A, B, and D. This process would not be difficult if the differences between current salary averages and prorated national averages were small. Typically, however, the differences will be significant and a phase-in period will be necessary.

The second phase of the study required a determination of salary increase funding which would be made available to each college during the following year. In this case, total salary increase funds were fixed by legislative action at 7.1% for continuing faculty of which approximately 4% was a required increase for all faculty negotiated by agreement with the faculty union. The remaining 3.1% was available as

discretionary funds and could be used for recognition of merit, recognition of the marketplace, and other salary increases deemed appropriate by the university administration. The average increase for all continuing faculty, however, was required to be 7.1%.

A further constraint on available salary increase funds exists as a matter of good administrative policy. Regardless of any observed discrepancies in Table 1, it is essential that each dean and department chairperson have some discretionary funds available to reward outstanding performance on the part of selected faculty members. Since a salary increase of approximately 4% was uniformly provided for all faculty members by collective bargaining agreement, funding above 4% would be required so that each college could provide selected merit increases. After a significant amount of review and discussion, it was agreed that each college would receive 2% funding (above the required 4%) for recognition of meritorious performance. In other words, only 1.1% of the current faculty salary funding was available for making marketplace adjustments which would place each college in a more uniformly competitive position for hiring and retaining the best faculty. It is apparent that this limited amount of funding would permit only a slight improvement in the marketplace variations shown in Table 1.

A further study of Table 1 indicates that salaries in college B are above the prorated national average by an amount greater than that of any other college. Therefore, subsequent year salary funding in college B for continuing faculty was limited to the amount necessary to provide union negotiated increases and selected increases for meritorious performance. Hence, each college received 4% for union negotiated increases and 2% for merit increases as a minimum. Remaining available

salary increase funds were distributed to colleges other than college B in proportion to the amount each college differed from the marketplace competitive position represented by college B.

Table 2 shows the distribution of marketplace adjustments. All colleges except college B received marketplace adjustments to move them toward an equally competitive position with college B. Ideally, the administration might wish to make the full adjustment in one year but, as shown in Column (3) of Table 2, this would have required a total of 297,678 dollars. In reality, because of the legislatively imposed salary increase limit of 7.1% for continuing faculty and the need for 6% funding for across-the-board and merit salary increases, only 77,883 dollars (1.1%) were available for marketplace adjustments. Marketplace adjustments in each college were therefore prorated to the available total as shown in Column (4).

Insert Table 2 approximately at this point.

Table 3 summarizes salary dollar allocations made to each college. Percentage increases differ, of course, and those colleges which are the most competitive compared to national average salaries received the lowest percentage increases while colleges which are least competitive received the highest increases.

Insert Table 3 approximately at this point.

Table 4 provides comparision figures showing the status of each of the six colleges above or below the prorated national marketplace level

for both the base year and the following year. In making this comparison, the assumption was made that relative rank and discipline averages will remain unchanged in the year following the base year and that national salary averages will also increase by 7.1%.

Insert Table 4 approximately at this point.

Although progress toward making each college equally competitive is clearly obvious in Table 4, it was limited because various constraints have reduced significantly the amount of money available for marketplace adjustments. Still, some progress has been made and the colleges are more equally competitive in retaining the best faculty members. In the process, each college retained flexibility to meet across-the-board commitments and provide merit increases for outstanding faculty members.

A third and final step in the study and in the determination of the total salary allocation to each college required the allocation or funds for new and replacement faculty positions. This was accomplished by providing funding for each new or replacement position at the new assistant professor salary level provided by the Oklahoma State Faculty Salary Survey. The procedure provides equally competitive funding in each college for attracting new faculty members and, over time, will also help to correct inequities in the competitive salary averages in each college.

SUMMARY AND CONCLUSIONS

It is the contention of the authors that university and college administrators must establish and maintain competitive salary levels in each discipline if quality faculty members are to be recruited and

retained. The recruitment and retention of good faculty members helps to ensure quality academic programs. Typically, a review of discipline salaries in any college or university will reveal significant differences when compared to averages nationally or regionally. These differences can and need to be corrected especially in those disciplines where the university or college has reached a point where salaries are far below national or regional averages.

The correction of salary inequities related to national marketplace conditions requires recognition of a number of salary allocation constraints. The total available salary dollars are always limited and may be below the amount needed to bring internal salary averages to the national level. No amount of internal salary allocation manuevering can correct this problem but at least the various disciplines can be adjusted so that each is equally competitive in the national marketplace. A second constraint consists of those requirements imposed by institutional governing bodies or faculty union contracts which require across-the-board salary increases. Where discretionary funds in addition to across-the-board increases are available, progress toward making all disciplines uniformly competitive can be made and, if the process is used consistently, will result in an equitable salary pattern compared to the national marketplace. The need to provide merit increase funding is a third constraint on salary allocation policies which cannot be ignored. Regardless of the average salary level in any discipline,it is essential that meritorious faculty members be recognized in the internal salary policy and procedures. Merit increase funding will further reduce the ability of administrators to correct marketplace inequities internally but only to the extent that

a longer period of time will be required to correct the inequities.

Nationally, only one study was found which provided average salary data by discipline and which included information for each faculty rank. The Oklahoma State Faculty Salary Survey provides a basis to compare salaries internally with the national marketplace and to make internal adjustments through the salary dollar allocation process. In the case considered in this paper, a 7.1% increase in total salary dollars was available for continuing faculty members. Of this amount 4% was specified as an across-the-board increase by contract with the faculty union, 2% was determined administratively to be essential to provide merit increase funds in each college and 1.1% was available to make marketplace adjustments. The marketplace adjustments were distributed in a manner which would make the respective colleges and departments more equitable in the national salary marketplace. Although available salary funding was limted, improvement was accomplished through consistent procedures which can be continued annually until a fully equitable position is reached.

BIBLIOGRAPHY

Bolte, John R.; Thomas, M. H.; and Coleman, D. R., "An Analysis of Promotion Philosophies and Related Implications for the Institution." Paper presented at the 1976 Association for Institutional Research Forum, Los Angeles, California, May 5, 1976.

Braskamp, Larry A. and Johnson, David Richard. "The Use of a Parity-Equity Model to Evaluate Faculty Salary Policies." Paper presented at the annual meeting of the American Educational Research Association, New York, N. Y., April, 1977.

Fuller, Bruce. "A Framework for Academic Planning." Journal of Higher Education, Vol. XLVII, No. 1 (Jan/Feb 1976), 447-63.

Gillian, M. L. "Faculty Salary Survey, 1975-76." Unpublished Study, Oklahoma State University, 1976.

Tuckmam Barbara H. and Tuckman, Howard P. "The Structure of Salaries at American Universities." Journal of Higher Education, Vol. XLVII, No. 1 (Jan/Feb 1976), 51-63.

TABLE 1

COMPARISON OF EXISTING SALARY AVERAGES WITH NATIONAL AVERAGES

College	Current Salary Expenditure For Continuing Faculty	Required Salary Amount Using National Averages	Required Salary Amount Prorated To Current Salary Expenditure	Percent Above (Below) the Prorated National Average
A	$ 1,153,154	$ 1,249,067	$ 1,124,129	2.58
B	1,326,003	1,417,168	1,275,415	3.97
C	877,145	1,018,945	917,025	(4.35)
D	963,378	1,046,397	941,730	2.30
E	1,386,117	1,540,675	1,386,568	(0.03)
F	1,374,438	1,594,898	1,435,368	(4.24)
TOTAL	$7,080,235	$7,867,150	$7,080,235	

TABLE 2

CALCULATION OF MARKETPLACE ADJUSTMENTS

College	Current Salary Expenditure Plus Required Or Approved Fixed Increases (1)	Required Funding To Place Each College at the Same Funding Level As College B When Compared to the National Marketplace (2)	Required Marketplace Adjustment Col(2) - Col(1) (3)	Required Marketplace Adjustment Prorated To Available Funds (4)
A	$ 1,222,343	$ 1,238,838	$ 16,495	$ 4,316
B	1,405,563	1,405,563	0	0
C	929,774	1,010,601	80,827	21,147
D	1,021,181	1,037,828	16,647	4,355
E	1,469,284	1,528,059	58,775	15,378
F	1,456,904	1,581,838	124,934	32,687
TOTAL	$ 7,505,049	$ 7,802,727	$ 297,678	$ 77,883

TABLE 3

SUMMARY OF FIXED INCREASE AND
MARKETPLACE ADJUSTMENTS

College	Current Salary Expenditure For Continuing Faculty	Across The Board And Merit Salary Adjustments (6%)	Marketplace Adjustments	Total Salary Dollar Allocation For Continuing Faculty	% Increase Over Current Year Funding
A	$ 1,153,154	$ 69,189	$ 4,316	$ 1,226,659	6.37
B	1,326,003	79,560	0	1,405,563	6.00
C	877,145	52,629	21,147	950,921	8.41
D	963,378	57,803	4,355	1,025,536	6.45
E	1,386,117	83,167	15,378	1,484,662	7.11
F	1,374,438	82,466	32,687	1,489,591	8.38
TOTAL	$ 7,080,235	$ 424,814	$ 77,883	$ 7,582,932	7.10

TABLE 4

COMPARISON OF COMPETITIVE

POSITION OF EACH COLLEGE IN THE

NATIONAL MARKETPLACE

BASE YEAR AND FOLLOWING YEAR

College	Base Year: Percentage Above (Below) The Prorated National Average	Following Year: Percentage Above (Below) The Prorated National Average
A	2.58	1.89
B	3.97	2.90
C	(4.35)	(3.18)
D	2.30	1.68
E	(0.03)	0.00
F	(4.24)	(3.10)